



## Metropolitan Transportation Commission Arterial Operations Program

### Overview

*MTC's Arterial Operations Program includes operational strategies that can be implemented to manage traffic flow to enhance operations, capacity, and safety along arterials.*

The Metropolitan Transportation Commission's (MTC) Freeway Performance Initiative (FPI) is designed to maximize the efficiency and improve the operations and safety of, not only the existing freeway and highway networks, but also the arterial network. The region's arterials carry heavy traffic and experience significant congestion during peak hours. Congestion leads to not only loss of productive time, but also unreliable travel and frustration to road users. The Bay Area has over 33,000 directional miles of arterials and local streets and approximately 11,000 traffic signals.

#### Program Goals

MTC has set aside funds that can be used to implement low-cost upgrades to significantly improve the speed and reliability along arterials. The overall goals are to improve travel time and travel time reliability along arterials (including autos and transit vehicles) and improve the safety of motorists, transit riders, pedestrians, and bicyclists. Improvements to air quality, by decreasing motor vehicle emissions and fuel consumption, can also be achieved through these goals.

#### Program Elements

MTC administers the **Program for Arterial System Synchronization (PASS)**, which provides technical assistance to Bay Area agencies to improve the safety and efficiency of arterials in the region. Since its inception in Fiscal Year 2010-11, PASS has successfully re-timed over 2,000 traffic signals to improve signal coordination across jurisdictions and

provide priority signal timing for transit vehicles. Prior to PASS (since the late 1990s), MTC has committed funding and technical support to local agencies to prepare updated arterial signal timing plans.

Building on the success of PASS, MTC launched the **Next Generation Arterial Operations Program (NextGen AOP)** in FY14/15 to implement and explore the benefits of low-cost advanced technologies that can improve arterial operations across all modes. The four projects selected under the first phase of this Program are ongoing and scheduled to be completed sometime in FY17/18. Technologies that are being implemented as part of NextGen AOP include adaptive signal control systems, transit signal priority, real-time traffic monitoring, and bike detection.

#### Program Guidelines – PASS Program

The guidelines and selection process described in this Call for Projects is for PASS. Applicants should review the project eligibility criteria described in Attachment A, which must be met under the FY16/17 PASS cycle.

Successful applicants under PASS will receive technical assistance from consultants procured by MTC. The services to be performed by the consultants will be defined by the MTC Program Manager, in coordination with the grantee.

## **Program for Arterial System Synchronization (PASS) Program Guidelines FY 2016/17 Cycle**

The Metropolitan Transportation Commission (MTC) invites eligible Bay Area public agencies to submit applications for consideration in the Program for Arterial System Synchronization (PASS) – FY 2016/17 Cycle. Up to \$1 million in federal funds are currently available to fund projects that improve arterial operations through the coordination of traffic signals.

### **Background**

The purpose of PASS is to provide technical consultant assistance to cities/counties to update traffic signal timing plans as a low-cost way to improve the safety and efficiency of arterials in the region. MTC will administer and manage the program, but the primary responsibility for the operation and retiming of traffic signals resides with the agency that owns and operates them. MTC will work closely with the project sponsors and consultants to successfully complete the PASS projects.

### **Program Goals**

The goals of PASS are to:

- 1) Improve travel time and travel time reliability for autos and transit vehicles along eligible arterials.
- 2) Improve air quality by decreasing motor vehicle emissions and fuel consumption.
- 3) Improve safety of motorists, pedestrians, and bicyclists.

### **Eligible Projects**

There are three different project tiers – with each tier having different eligibility requirements. Projects meeting the requirements for Tier 1 will receive the highest priority, followed by Tier 2 and Tier 3. Due to limited funds available for PASS, a local cash match is included as an eligibility requirement in order to leverage regional discretionary funds with local dollars. Local match funds will be provided through a Funding Agreement between MTC and the local agency. The eligibility requirements for each tier are summarized in Attachment A.

### **Project Services**

There are two types of eligible services: 1) Basic Services, and 2) Additional Services. Basic Services include the development and implementation of coordination plans for weekday commute periods, school peak periods, weekend peak periods, and non-peak periods. Additional Services include the development and implementation of incident management flush plans, transit signal priority plans, traffic responsive timing plans, special timing plans for major events, etc. It is the responsibility of the applicants to justify the need and benefits of these additional timing plans.

### **Application**

Interested agencies must submit one electronic copy (PDF) of the application, including the required attachments, via email or CD/DVD. Applications are due by **2:00 PM on Friday, May 13, 2016**. Any applications received after that date and time will not be accepted. By submitting an application, each applicant agrees to satisfy the following minimum requirements: 1) indemnify MTC by signing the Waiver of Claims and Indemnification Agreement; 2) submit agency-wide signal inventory to include in the Bay Area Signalized Intersection System (BASIS); and 3) implement new signal timing plans and commit to completing the project within 12 months from project start.

## Project Evaluation

Upon meeting the eligibility requirements described in Attachment A, applications will then be evaluated based on the following criteria, with sub-criteria listed in order of importance:

- Ability to meet program goals (40%)
  - Travel time savings and reliability (autos, transit)
  - Air quality improvements
  - Safety improvements for motorists, transit riders, pedestrians, bicyclists
- Project Readiness (35%)
  - Corridors that have no planned construction activities that will impact the PASS project schedule
  - Projects that can be completed within 12 months from project start date
  - Intersections with signal interconnect and controllers less than 15 years old
- Project Management Capacity (25%)
  - Evidence of dedicated engineering and operational support from local jurisdictions
  - Successful completion of a previous PASS project, if applicable

## Approval Notification

Based on the evaluation results and funding availability, MTC staff will recommend a list of projects to the MTC Operations Committee for approval. If selected and approved by the Committee, project sponsors will be notified and required to submit the attached Waiver of Claims and Indemnification Agreement within 30 days of project approval notification. If an agency has already executed this agreement with MTC, for a previous PASS project, it may not need to sign a new agreement. For questions regarding the existence or validity of your agency's agreement, please contact the MTC Program Manager.

## Timeline

The timeline for application review and approval is as follows:

Action	Timeline
Applications Due	Fri, May 13, 2016
Panel Review	May 2016
Approval of Projects to MTC Operations Committee	Fri, July 8, 2016
Project Approval Notifications	Fri, July 8, 2016
Waiver of Claims and Indemnification Agreement – Due Date	Mon, August 8, 2016
Project kickoff meetings	August 2016

## Contact

Completed application, including the required attachments, and all inquiries related to this program should be submitted to:

Virginia Lingham, PASS Project Manager  
Metropolitan Transportation Commission  
101 Eighth Street, Oakland CA 94607  
Phone: 510.817.5826  
Email: vlingham@mtc.ca.gov

## Attachments

Attachment A: Eligibility Requirements  
Attachment B: Application Form  
Attachment C: Waiver of Claims and Indemnification Agreement  
Attachment D: Scope of Work, Schedule and Budget

## ATTACHMENT A

### Eligibility Requirements for PASS FY 2016/17 Cycle

Tier	Eligibility Requirements	
	Characteristics	Local Match <sup>1, 2</sup>
<b>Tier 1</b>	Tier 1 projects must meet the following three requirements: 1) Arterial functions as a reliever route to nearby freeway(s) <sup>3</sup> ; 2) Arterial serves transit lines with high ridership. Specifically, the total of all lines has at least an average of 1,000 weekday boardings; <u>and</u> 3) Arterial has a minimum Average Daily Traffic (ADT) volume of 20,000 vehicles, or a minimum peak hour traffic volume of 600 vehicles per hour per lane in the peak direction <sup>4</sup> .	10%
<b>Tier 2</b>	Tier 2 projects must meet <u>any two</u> of the following three requirements: 1) Arterial functions as a reliever route to nearby freeway(s) <sup>3</sup> 2) Arterial serves transit lines with high ridership. Specifically, the total of all lines has at least an average of 1,000 weekday boardings. 3) Arterial has a minimum Average Daily Traffic (ADT) volume of 20,000 vehicles, or a minimum peak hour traffic volume of 600 vehicles per hour per lane in the peak direction <sup>4</sup> .	15%
<b>Tier 3</b>	Tier 3 projects can meet <u>any</u> of the following three requirements: 1) Arterial functions as a reliever route to nearby freeway(s) <sup>3</sup> ; 2) Arterial serves transit lines with high ridership. Specifically, the total of all lines has at least an average of 1,000 weekday boardings; <u>or</u> 3) Arterial has a minimum Average Daily Traffic (ADT) volume of 20,000 vehicles, or a minimum peak hour traffic volume of 600 vehicles per hour per lane in the peak direction <sup>4</sup> .	20%
Other corridor characteristics for consideration, but not required for eligibility: a) Arterials with significant changes in traffic patterns and volumes b) Arterials include traffic signals from multiple jurisdictions c) Signals along an arterial that is impacted by modifications to nearby freeway interchanges, implementation of ramp metering, road widening, intersection upgrades, or lane configuration changes d) Project is in conjunction with other established regional programs, such as Transit Performance Initiative, Freeway Performance Initiative, Ramp Metering, Safe Routes to Schools, Safe Routes to Transit, Complete Streets, SMART corridors, Integrated Corridor Management, etc.		
<p>Notes:</p> <p><sup>1</sup> Local match fund sources cannot be in the form of in-kind staff resources.</p> <p><sup>2</sup> For State-operated signalized intersections only, a 10% local match is required for any tier and can be met by either Caltrans and/or the local agency. Any financial commitments between Caltrans and the local agency to meet this requirement must be demonstrated in the project application.</p> <p><sup>3</sup> Arterials that function as reliever routes are those that become de-facto diversion routes whenever incidents occur on nearby parallel freeways. Project applicants must provide some type of data to demonstrate the corridor functions in this capacity.</p> <p><sup>4</sup> Traffic volume data based on the most recent three years.</p>		

## ATTACHMENT B

### Application Form - PASS FY 2016/17 Cycle

#### PART I: GENERAL INFORMATION

<b>a) PROJECT SPONSOR</b>				
Please provide the contact information of the official authorizing this application submittal.				
Name: Title: Organization: Mailing Address: Telephone: Email:				
<b>b) PROJECT MANAGER <i>(if different from above)</i></b>				
Please provide the contact information of the person who will be the day-to-day contact for this project.				
Name: Title: Organization: Mailing Address: Telephone: Email:				
<b>c) PROJECT SPONSOR &amp; PARTICIPATING AGENCIES</b>				
Starting with your agency, please list all of the details requested in the table below. Add or delete rows, as necessary, depending on the number of agencies.				
#	Agency Name	Corridor	# of Signals	
1				
2				
3				
<b>Total Number of Project Signals</b>				
<b>d) INDEMNIFICATION AGREEMENT</b>				
Starting with your agency, excluding Caltrans, please provide the information requested in the table below. Please contact the MTC Program Manager if you have any questions regarding the existence or validity of your agency's agreement. Add or delete rows, as necessary, depending on the number of agencies.				
#	Agency Name	Valid Agreement (Yes/No)	If Yes, List Agreement Date	If No, Expected Submittal Date
1				
2				
3				

## PART II: SERVICES REQUESTED

### a) BASIC SERVICES

Please identify the basic services you are requesting.

☐ **Weekday** Peak Period Signal Coordination:

☐ Weekday AM ☐ Weekday Mid-day ☐ Weekday PM

☐ Other, please specify peak hours: \_\_\_\_\_

☐ School Peak Periods, please specify hours: \_\_\_\_\_

☐ **Weekend** Peak Period Signal Coordination:

☐ Two peak periods ☐ Three peak periods

### b) ADDITIONAL SERVICES

Please identify any additional services you are requesting.

☐ Incident Management Flush Plans

☐ Transit Signal Priority Plans

☐ Traffic Responsive Timing Plans

☐ Adaptive Signal Timing

☐ Other, please specify: \_\_\_\_\_

### c) DATE OF LAST COORDINATION

Please provide the last known date (MM/YY) of signal retiming for each corridor in the project. Also indicate whether the retiming was done through PASS.

Corridor Name and Date: \_\_\_\_\_ PASS: Yes ☐ No ☐

Corridor Name and Date: \_\_\_\_\_ PASS: Yes ☐ No ☐

Corridor Name and Date: \_\_\_\_\_ PASS: Yes ☐ No ☐

### d) CONSULTANT ASSIGNMENT

Please indicate your willingness to work with the consultant assigned by MTC. MTC reserves the right to withdraw a project approval if any project sponsor is not willing to work with the assigned consultant.

☐ YES ☐ NO

If No, please explain:

### **PART III: DETAILED PROJECT INFORMATION**

#### **a) PROJECT OVERVIEW**

Please provide a detailed description of the proposed project and the services requested in this application. Also identify how the proposed project functions as a reliever route when incidents occur on the nearby freeway(s).

If applicable, please list any PASS or similar signal timing project previously completed with MTC.

#### **b) IMPLEMENTATION**

Indicate how the new timing plans will be implemented.

☐ Traffic Management Center (TMC) or remote access to implement new timing plans

Please specify the number of signals: \_\_\_\_\_

☐ Field Implementation

Please specify number of signals: \_\_\_\_\_

Please explain in detail:

#### **c) SIGNAL COMMUNICATIONS**

Indicate if the project signals have communication between them or have a common time source to enable coordination.

☐ Yes    ☐ No

Please explain in detail the type of communication:

### PART III: DETAILED PROJECT INFORMATION (continued)

#### d) GPS CLOCKS

Are you requesting any GPS Clocks from PASS to provide a common time source between any of the project signals?

☐ Yes    ☐ No

If yes, please provide the requested information below for all locations that require GPS Clocks. (List one intersection per row. Add or delete rows, as necessary.)

#	Intersection (Main St/Cross St)	Controller Type	Signal Ownership (agency)	Signal Operations (agency)
1				
2				
3				
4				
5				
6				
7				
8				

#### e) ADDITIONAL PLANS/SERVICES

Please list the additional plans and/or services being requested and the number of project signals involved for each particular service. (Add or delete rows, as necessary.)

#	Additional Service	Corridor	# of Signals
1			
2			
3			

#### f) ADDITIONAL SERVICES DESCRIPTION

Please describe in detail the Additional Services requested above, and attach all available supporting documentation to justify this service request.

## PART IV: PROJECT BENEFITS

### a) GOALS

Please indicate which of the following PASS goals listed below can be satisfied with this project.

- ☐ Improve travel time and travel time reliability for autos
- ☐ Improve travel time and travel time reliability for transit vehicles
- ☐ Improve air quality by decreasing motor vehicle emissions and fuel consumption
- ☐ Improve the safety of (or other benefits to) transit riders, pedestrians, and/or bicyclists
- ☐ Other, please specify: \_\_\_\_\_

### b) JUSTIFICATION

Please describe how the proposed project will achieve the goals selected above.

## PART V: DEMONSTRATION OF PARTICIPATION AND SUPPORT

### a) LOCAL MATCH

Please indicate, with an "X", which local match tier level applies to each project corridor. Refer to Attachment A for the eligibility requirements for each of the three tiers. (Add or delete rows, as necessary.)

#	Project Corridor	Tier 1 (10% local match)	Tier 2 (15% local match)	Tier 3 (20% local match)

### b) AGENCY RESOURCES

Describe the staffing resources your agency is committed to providing in order to deliver your project within the PASS cycle. Please provide estimated staff hours that you expect to dedicate to this project.

### c) PROJECT READINESS

Please describe the following:

1. The type of signal interconnect and controllers (including age of equipment) along the project corridor.
2. The project schedule and how the project can be completed within the PASS cycle (ending June 30, 2017).

**NOTE: The project corridor must not have any planned construction activities that may impact the ability to complete this project within the PASS cycle.** Construction projects include, for example, traffic signal upgrades, control cabinet replacement, roadway construction, utility maintenance, etc.

## PART VI: APPLICATION ATTACHMENTS

Please include the following attachments with your application as **one** PDF file. Applications without the required attachments will be considered incomplete and will not be accepted or reviewed.

<b>a) PROJECT MAP (Required)</b> Please include a Project Map showing an overview of the project area with ALL of the project signals, cross streets, freeways, schools, hospitals, shopping malls, other traffic generators, etc. Arterials that function as reliever routes should be clearly identified on the map.											
<b>b) TRAFFIC SIGNAL INFORMATION (Required)</b> Please include a table containing the following information for all traffic signals included in the project.											
#	Intersection	Signal Ownership	Signal O&M	ADT*	Peak-hour Volume per* Direction (vphpl)	Controller Type	Firmware	Coordination Type	Implementation Type (remote or field)	Basic Services Requested	Additional Services Requested
*Traffic volume data must be within the past three years.											
<b>c) TRANSIT INFORMATION (Required)</b> Please include a table containing the following information regarding transit for all of the project corridors. (Add or delete rows, as necessary.)											
#	Transit Agency	Transit Route #	Frequency	Project Corridor(s) on the Route	# of Project Signals on the Route	Average Weekday Ridership					
<b>d) COMMUNICATION EQUIPMENT INFORMATION (if applicable)</b> If applicable, please provide detailed information on any communications equipment you are requesting.											
<b>e) SUPPORTING DOCUMENTATION for ADDITIONAL SERVICES (if applicable)</b> If applicable, please attach any additional information you feel supports your request for the Additional Services requested in this application.											

## PART VII: TRAFFIC SIGNAL DATA

<b>a) PROJECT SIGNAL DATA (Required, with the application submittal)</b> Please include in a separate CD/DVD, one <u>electronic</u> copy of all the existing data available for the traffic signals which are a part of this project. This data includes, but not limited to, signal timing sheets, coordination plans, signal as-builts, maps, aerial photos, Synchro files, computer models, historical count data, latest three years of collision data, etc. Please contact the MTC Program Manager if you are unable to provide this data with your application for any reason.
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## PART VIII: SIGNATURES

The primary project sponsor must sign the application below. Other participating agencies may sign the application below or submit a letter of support indicating their participation in the project. By signing the application and/or providing letters of support, the signatory affirms that the statements contained in the application are true and complete to the best of their knowledge.

1. Primary Project Sponsor:

2. Participating Agency:

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Signature	Date
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Name:
Title:
Organization:
Mailing Address:

  

Telephone:
Email:

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Signature	Date
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Name:
Title:
Organization:
Mailing Address:

  

Telephone:
Email:

3. Participating Agency:

4. Participating Agency:

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Signature	Date
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Name:
Title:
Organization:
Mailing Address:

  

Telephone:
Email:

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Signature	Date
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Name:
Title:
Organization:
Mailing Address:

  

Telephone:
Email:

## **ATTACHMENT C**

### Waiver of Claims and Indemnification Agreement

**Please note:**

- If an agency has already executed this agreement with MTC, for a previous PASS project, it may not need to sign a new agreement. For questions regarding the existence or validity of your agency's agreement with MTC, please contact the MTC Program Manager.
- The primary project sponsor and each participating agency (excluding Caltrans) are required to submit two (2) signed originals of this agreement. After executing the agreement, one original will be retained by MTC and the other original will be returned to the respective agency.
- Please edit the agreement as per the following instructions by making changes as appropriate to your agency:
  - For the text in **Blue font** in the agreement, please replace the text as appropriate. (e.g., the City of San Leandro will edit the text **AGENCY NAME** to **City of San Leandro**.)
  - For the text in **Red font** in the agreement, please make a selection as appropriate and delete the other two choices. (e.g., the City of San Leandro will edit the text **"CITY"/"COUNTY"/"TOWN"** to **"CITY"**)

WAIVER OF CLAIMS AND INDEMNIFICATION AGREEMENT  
Between METROPOLITAN TRANSPORTATION COMMISSION  
And AGENCY NAME

THIS AGREEMENT is made and entered into as of the insert date (MM-DD-YYYY), by and between the Metropolitan Transportation Commission, a regional transportation planning agency established pursuant to California Government Code § 66500 *et seq.*, (herein called “MTC”), and agency name (herein called “CITY”/“COUNTY”/“TOWN”).

WITNESSETH

WHEREAS, MTC has entered or will enter into technical services agreements with several consulting firms (herein called “the Consultants”), under which the firms will provide assistance to various Bay Area jurisdictions in the retiming of traffic signals (herein called “the Project”); and

WHEREAS, CITY/COUNTY/TOWN is participating in the Project by receiving assistance from one or more of the Consultants (herein called “the Consultant”); and

WHEREAS, the parties wish to define CITY’s/COUNTY’s/TOWN’s obligations to MTC respecting waiver of claims and indemnity;

NOW, THEREFORE, the parties hereto agree as follows:

1.0 WAIVER OF CLAIMS AGAINST MTC

CITY/COUNTY/TOWN waives all claims by CITY/COUNTY/TOWN, its directors, supervisors, officers, employees, or agents against MTC, its commissioners, officers, and/or employees for damages, loss, injury and/or liability, direct or indirect, resulting from CITY’s/COUNTY’s/TOWN’s participation in the Project and/or the services provided to CITY/COUNTY/TOWN by the Consultant under contract to MTC. CITY’s/COUNTY’s/TOWN’s waiver shall not apply to liability arising from and caused by the gross negligence or willful misconduct of MTC, its commissioners, officers, and/or employees.

2.0 INDEMNIFICATION AND DEFENSE

CITY/COUNTY/TOWN agrees to indemnify, hold harmless and defend MTC, its commissioners, officers, and employees from any and all third party claims, demands, lawsuits, liability, loss, damages, injury and/or liability, direct or indirect (including any and all costs and expenses in connection therewith), resulting from or in connection with provision of services to CITY/COUNTY/TOWN by the Consultant under contract with MTC, to the extent such claims, demands, etc. are not covered by the Consultant’s indemnification of MTC in the Consultant’s contract with MTC. CITY’s/COUNTY’s/TOWN’s indemnification obligation shall not apply to liability arising from and caused by the gross negligence or willful misconduct of MTC, its commissioners, officers, agents, and employees. CITY/COUNTY/TOWN is responsible for obtaining from MTC a copy of the applicable Consultant agreement(s).

3.0 TERM

The term of this Agreement shall continue indefinitely, applying to multiple Consultant contracts, unless terminated by written notice of either party or superseded by another Indemnification Agreement.

IN WITNESS WHEREOF, this agreement has been executed by the parties hereto.

METROPOLITAN TRANSPORTATION  
COMMISSION

AGENCY NAME

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Steve Heminger, Executive Director

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Authorized Signator Name, Title

Approved as to form:

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Attorney Name, Title

## **ATTACHMENT C1**

### **Consultant Indemnification and Insurance Requirements**

#### **CONSULTANT INDEMNIFICATION**

CONSULTANT agrees to indemnify and hold harmless MTC, Caltrans, and Client Jurisdictions, and their commissioners, directors, officers, agents, and employees (collectively “MTC Indemnified Parties”) from and against any and all claims, demands, actions, causes of action, damages, liability, obligation, costs and expenses (including attorneys’ fees and costs) of any kind whatsoever, including (without limitation) those for personal injuries (including, but not limited to death, bodily injuries, emotional or mental distresses and losses of consortium), property damages or pecuniary, financial or economic losses of any kind whatsoever (collectively “Claims and Losses”) if the Claims and Losses arise out of, pertain to, or relate to CONSULTANT’s recklessness, willful misconduct, or negligent services performed under this Agreement. It is understood and agreed that Consultant has no obligation to indemnify and hold the MTC Indemnified Parties harmless to the extent that the Claims and Losses are caused by the negligence of the MTC Indemnified Parties.

CONSULTANT further agrees to immediately defend the MTC Indemnified Parties with respect to any Claims and Losses if such Claims and Losses are alleged to arise out of, pertain to, or relate to any allegations of CONSULTANT’s recklessness, willful misconduct, or negligent services performed under this Agreement. As part of this defense obligation, CONSULTANT agrees to either retain counsel to defend the MTC Indemnified Parties or pay charges of the MTC Indemnified Parties’ attorneys with regard to the Claims and Losses.

CONSULTANT’s reasonable defense costs (including attorney and expert fees), incurred in providing a defense for the MTC Indemnified Parties shall be reimbursed by MTC except to the extent such defense costs arise, under principles of comparative fault, from CONSULTANT’s (a) negligent acts or omissions; (b) recklessness; or (c) willful misconduct.

The provisions set forth in this Article are intended to be applied to the fullest extent allowed under the law and, if any portion of it is found to be void or unenforceable, the remainder is to be severable and enforceable. This indemnification shall survive termination or expiration of this Agreement.

#### **CONSULTANT INSURANCE REQUIREMENTS**

A. Minimum Coverages. The insurance requirements specified in this section shall cover CONSULTANT’s own liability and the liability arising out of work or services performed under this Agreement by any subconsultants, subcontractors, suppliers, temporary workers, independent contractors, leased employees, or any other persons, firms or corporations that CONSULTANT authorizes to work under this Agreement (hereinafter referred to as “Agents.”) CONSULTANT shall, at its own expense, obtain and maintain in effect at all times during the life of this Agreement the following types of insurance against claims, damages and losses due to

injuries to persons or damage to property or other losses that may arise in connection with the performance of work under this Agreement.

CONSULTANT is also required to assess the risks associated with work to be performed by Agents under subcontract and to include in every subcontract the requirement that the Agent maintain adequate insurance coverage with appropriate limits and endorsements to cover such risks. To the extent that an Agent does not procure and maintain such insurance coverage, CONSULTANT shall be responsible for said coverage and assume any and all costs and expenses that may be incurred in securing said coverage or in fulfilling CONSULTANT's indemnity obligation as to itself or any of its Agents in the absence of coverage.

In the event CONSULTANT or its Agents procure excess or umbrella coverage to maintain certain requirements outlined below, these policies shall also satisfy all specified endorsements and stipulations, including provisions that CONSULTANT's insurance be primary without right of contribution from MTC. Prior to beginning work under this contract, CONSULTANT shall provide MTC with satisfactory evidence of compliance with the insurance requirements of this section.

1. Workers' Compensation Insurance with Statutory limits, and Employer's Liability Insurance with a limit of not less than \$1,000,000 per employee and \$1,000,000 per accident, and any and all other coverage of CONSULTANT's employees as may be required by applicable law. Such policy shall contain a Waiver of Subrogation in favor of MTC. Such Workers' Compensation & Employer's Liability may be waived, if and only for as long as CONSULTANT is a sole proprietor or a corporation with stock 100% owned by officers with no employees.

2. Commercial General Liability Insurance for Bodily Injury and Property Damage liability, covering the premises and operations, and products and completed operations of CONSULTANT and CONSULTANT's officers, agents, and employees and with limits of liability which shall not be less than \$1,000,000 combined single limit per occurrence with a general aggregate liability of not less than \$2,000,000, a products/completed operations aggregate liability limit of not less than \$2,000,000 and Personal & Advertising Injury liability with a limit of not less than \$1,000,000. Such policy shall contain a Waiver of Subrogation in favor of MTC.

Products and completed operations insurance shall be maintained for three (3) years following termination of this Agreement.

MTC and those entities listed in Part 3 of this Attachment E (if any), and their commissioners, directors, officers, representatives, agents and employees are to be named as additional insureds for ongoing and completed operations. Such insurance shall be primary and non-contributory, and contain a Separation of Insureds Clause as respects any claims, losses or liability arising directly or indirectly from CONSULTANT's operations.

3. Business Automobile Insurance for all automobiles owned (if any), used or maintained by CONSULTANT and CONSULTANT's officers, agents and employees, including

but not limited to owned (if any), leased (if any), non-owned and hired automobiles, with limits of liability which shall not be less than \$1,000,000 combined single limit per accident.

4. Umbrella Insurance in the amount of \$1,000,000 providing excess limits over Employer's Liability, Automobile Liability, and Commercial General Liability Insurance. Such umbrella coverage shall be following form to underlying coverage including all endorsements and additional insured requirements.

5. Errors and Omissions Professional Liability Insurance for errors and omissions and the resulting damages, including, but not limited to, economic loss to MTC and having minimum limits of \$1,000,000 per claim.

The policy shall provide coverage for all work performed by CONSULTANT and any work performed or conducted by any subcontractor/consultant working for or performing services on behalf of CONSULTANT. No contract or agreement between CONSULTANT and any subcontractor/consultant shall relieve CONSULTANT of the responsibility for providing this Errors & Omissions or Professional Liability coverage for all work performed by CONSULTANT and any subcontractor/consultant working on behalf of CONSULTANT on the project.

6. Property Insurance. Property Insurance covering CONSULTANT'S own business personal property and equipment to be used in performance of this Agreement, materials or property to be purchased and/or installed on behalf of MTC (if any), and builders risk for property in the course of construction (if applicable). Coverage shall be written on a "Special Form" policy that includes theft, but excludes earthquake, with limits at least equal to the replacement cost of the property. Such policy shall contain a Waiver of Subrogation in favor of MTC.

B. Acceptable Insurers. All policies will be issued by insurers acceptable to MTC, generally with a Best's Rating of A- or better with a Financial Size Category of VIII or better.

C. Self-Insurance. CONSULTANT's obligation hereunder may be satisfied in whole or in part by adequately funded self-insurance, upon evidence of financial capacity satisfactory to MTC.

D. Deductibles and Retentions. CONSULTANT shall be responsible for payment of any deductible or retention on CONSULTANT's policies without right of contribution from MTC. Deductible and retention provisions shall not contain any restrictions as to how or by whom the deductible or retention is paid. Any deductible or retention provision limiting payment to the Named Insured is unacceptable.

In the event that MTC seeks coverage as an additional insured under any CONSULTANT insurance policy that contains a deductible or self-insured retention, CONSULTANT shall satisfy such deductible or self-insured retention to the extent of loss covered by such policy, for any lawsuit arising from or connected with any alleged act of CONSULTANT, subconsultant, subcontractor, or any of their employees, officers or directors, even if CONSULTANT or subconsultant is not a named defendant in the lawsuit.

E. Claims Made Coverage. If any insurance specified above is written on a “Claims-Made” (rather than an “occurrence”) basis, then in addition to the coverage requirements above, CONSULTANT shall:

- (1) Ensure that the Retroactive Date is shown on the policy, and such date must be before the date of this Agreement or the beginning of any work under this Agreement;
- (2) Maintain and provide evidence of similar insurance for at least three (3) years following project completion, including the requirement of adding all additional insureds; and
- (3) If insurance is cancelled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the Agreement effective date, CONSULTANT shall purchase “extended reporting” coverage for a minimum of three (3) years after completion of the work.

F. Failure to Maintain Insurance. All insurance specified above shall remain in force until all work or services to be performed are satisfactorily completed, all of CONSULTANT’s personnel, subconsultants, subcontractors, and equipment have been removed from MTC’s property, and the work or services have been formally accepted. CONSULTANT must notify MTC if any of the above required coverages are non-renewed or cancelled. The failure to procure or maintain required insurance and/or an adequately funded self-insurance program will constitute a material breach of this Agreement.

G. Certificates of Insurance. Prior to commencement of any work hereunder, CONSULTANT shall deliver to MTC Certificates of Insurance verifying the aforementioned coverages. Such certificates shall make reference to all provisions and endorsements referred to above and shall be signed on behalf of the insurer by an authorized representative thereof.

H. Disclaimer. The foregoing requirements as to the types and limits of insurance coverage to be maintained by CONSULTANT are not intended to and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by CONSULTANT pursuant hereto, including, but not limited to, liability assumed pursuant to Article 9 of this Agreement.

## **ATTACHMENT D**

### **Scope of Work, Schedule and Budget**

#### **A. SCOPE OF WORK (SYNOPSIS)**

The Scope of Work (SOW) described below is a synopsis of the services to be performed by the Consultant. Based on the services requested, the final and full Scope of Work will be approved by the MTC Program Manager and included as a part of the PASS Consultant contract. A copy of the final Scope of Work is available to the local agency upon request. Each project will include the four tasks summarized below:

##### **Task 1: Development of Scope, Schedule, and Budget (SSB)**

- Consultant assigned by MTC will coordinate a kick-off meeting with all project stakeholders. At this meeting, stakeholder preferences to signal timing, status of signal equipment, anticipated construction activities, recommended protocols, and other project related information will be discussed in detail.
- Consultant will submit a draft SSB for stakeholder review. Consultant will address all comments received and submit a revised draft SSB. Any further changes to the SSB shall be approved by the MTC Program Manager and included in a final SSB.

##### **Task 2: Analysis of Existing Conditions**

- The purpose of this task is to help the project stakeholders understand the current traffic conditions on the corridors, such as traffic patterns, traffic generators, volumes, peak hours, bottlenecks, collision history, hot spots, etc.
- Consultant will collect peak period turning movement counts at all project intersections, including pedestrian and bicycle counts, seven-day 24-hour machine counts (ADT counts), and the 'before' travel time data.
- Consultant will collect all available existing data from stakeholders, such as existing timing sheets, coordination plans, traffic signal as-builts, collision data, historical count data, Synchro models, etc. for developing the existing computer models and conducting a thorough traffic analysis.
- Consultant will summarize the results of the analyses in a draft Existing Conditions Report and meet with stakeholders to discuss the results and present the computer models, if requested.
- Consultant will submit a Response to Comments memo addressing all the comments received from stakeholders before submitting the final Existing Conditions Report for approval.

##### **Task 3: Development of Recommendations for New Signal Timing Plans**

- Consultant will analyze the signal grouping, phase sequence, cycle lengths/splits/offsets,; collision data, etc. to develop the optimal time-of-day coordination plans.
- An interim deliverable may be submitted with these results to better understand the stakeholder signal timing preferences.
- Consultant will develop recommendations for optimal settings, coordination plans, hours of coordination, and transit signal priority parameters, if applicable.
- Consultant will submit these recommendations in the draft Recommendations Report, which will also include a comparison of existing and proposed timings, justifications for any recommended changes, and a quantitative/qualitative description of anticipated improvements, etc.

- Stakeholders will review to decide if these new signal timing plans are consistent with their objectives and approve the implementation of new timing plans for their respective signals.
- Consultant will submit a Response to Comments memo addressing any stakeholder comments before submitting the revised Recommendations Report for approval.

#### **Task 4: Implementation and Evaluation**

- This is the final stage of the project requiring the coordination of all stakeholders to successfully complete the project.
- Consultant will submit the revised timing sheets in the format requested by respective stakeholders for implementation.
- Stakeholders and the Consultant will implement the new timing plans by choosing the most effective way to minimize disruptions to traffic.
- Consultants will do the fine-tuning of the timing plans in the field and address any concerns from stakeholders, including assisting them in resolving complaints from the public.
- Consultant will collect the ‘after’ travel-time data and compare it with the ‘before’ travel-time runs to evaluate various measures of effectiveness. These benefits generally include, but are not limited to, travel-time savings; fuel consumption savings; emission reductions resulting in healthcare cost savings; speed harmonization; and reduction in the number of stops. The qualitative benefits to pedestrians, bicyclists, transit, side street traffic, safety, etc. will also be conducted.
- Consultant will submit a draft Project Report to include project overview, goals and objectives, corridors and services, project map, summary of existing conditions, recommendations, comparison of the old and new timings, implementation and fine-tuning results, issues or public complaints resolved, etc.
- The Project Report will summarize any traffic issues resolved in the project, including any other recommendations for future projects to further enhance the traffic flow.
- Consultant will revise the report after addressing all stakeholder comments before submitting the final Project Report for approval.
- Consultant will assist MTC in completing the Fact Sheets for each project by providing any maps, tables, data or text requested by the MTC Program Manager.

## **B. SCHEDULE**

The PASS projects have a typical schedule of one year that aligns with MTC’s fiscal year, which starts on July 1<sup>st</sup> of every year and ends on June 30<sup>th</sup> of the following year. However, on a case-by-case basis, some projects may be expedited or delayed with the approval of the MTC Program Manager. The approved schedule for each project will be incorporated in the Final Scope, Schedule and Budget. The expected schedule for the PASS FY 2016/17 Cycle is identified below:

<b>Task #</b>	<b>Deliverable</b>	<b>Costs (% of project budget)</b>	<b>Schedule for FY 2016/17 Cycle</b>
1A	Draft Scope, Schedule and Budget	5%	August 2016

1B	Final Scope, Schedule and Budget (SSB)	5%	September 2016
2A	Draft Existing Conditions Report	30%	November 2016
2B	Final Existing Conditions Report	10%	December 2016
3A	Draft Recommendations Report	15%	January 2017
3B	Revised Recommendations Report	10%	February 2017
4	Preliminary Implementation and Fine-tuning	15%	March – May 2017
4A	Draft Project Report with Benefit-Cost Analysis	5%	May – June 2017
4B	Final Project Report with Benefit-Cost Analysis	5%	June 2017

### C. BUDGET

MTC will pay consultants on a fixed-fee per deliverable basis, after the completion of the deliverables, based on the percentages listed in the Schedule. The project budget for any signal timing plans will be calculated in accordance with the table below:

Basic Services	Number of Scenarios	Cost per Intersection <sup>1</sup>
Signal timing plans implemented remotely	3	\$2,600
	2	\$2,300
	1	\$2,000
Signal timing plans implemented in the field	3	\$2,800
	2	\$2,500
	1	\$2,200

<sup>1</sup> Per intersection fee includes payment for all services described in Tasks 1 through 4.

MTC recognizes that some projects may require additional analysis, data collection, or have other additional services. The budget and payment schedule for these additional services are based on the level of effort to complete these tasks and are negotiated by the MTC Program Manager. Any approved additional services will be included in the final SSB, with a detailed description of the service, project schedule, budget, and payment schedule.